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**POPULAR ARTICLE**

**Empowering the Backbone: Farm women's vital role in Telangana's agriculture**

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**Introduction**

This paper investigates the interrelationship between gender dynamics, climate variability, environmental sustainability, and agricultural development has gained increasing scholarly attention in recent years. Within this context, women play a pivotal role in sustaining agricultural systems. Globally, they constitute a significant proportion of the agricultural workforce estimated at around 43 percent and their participation is often even higher in developing regions. Beyond their numerical contribution, women are central to food production and serve as custodians of natural resources. Their routine interaction with ecological systems, including soil, water, and biodiversity, enables them to accumulate rich experiential knowledge. This knowledge is particularly valuable in addressing climate-related challenges, as women frequently engage in practices such as seed preservation, adoption of drought-resilient crops, organic cultivation, and biodiversity conservation. Despite these contributions, their role remains insufficiently recognized in policy frameworks and academic discourse. Evidence from Telangana highlights that women are actively involved in nearly all stages of agricultural production, ranging from pre-sowing activities to post-harvest management. However, their

contributions are often constrained by socio-economic barriers, limited access to technology, and restricted participation in decision-making processes. Strengthening the role of women is therefore not only a matter of equity but also a critical requirement for achieving sustainable agricultural development and environmental resilience.

**Role of women in Telangana agriculture**

In Telangana, women form the foundation of the agricultural labor force, contributing a substantial share of the manual effort required for crop production. Estimates suggest that they perform nearly 70 percent of labor-intensive agricultural tasks. Their involvement spans the entire farming cycle, yet their contributions are frequently undervalued, particularly in relation to ownership rights and strategic decision-making.

**Agricultural operations**

Women are predominantly engaged in labor-intensive activities that demand precision and consistency. Participation rates are especially high in operations such as sowing, transplanting, and weeding. They also play a major role during harvesting and post-harvest handling, including cleaning, grading, drying, and storage of produce.

### **Livestock and allied activities**

In addition to crop production, women are deeply involved in allied sectors, which serve as important supplementary sources of income. Their responsibilities commonly include livestock management, such as milking, feeding, and maintenance of cattle sheds. Poultry rearing and small ruminant management are also largely handled by women, contributing to household nutritional security and financial stability.

### **Decision-making and constraints**

Although women contribute extensively to agricultural labor, their participation in decision-making processes remains uneven. They often exercise autonomy in routine operational matters, such as determining sowing schedules or managing nutrient application. However, decisions involving financial investments, land transactions, and market engagement are predominantly controlled by men. One of the primary structural barriers is limited land ownership among women, which significantly restricts their access to institutional credit, government schemes, and extension services. Furthermore, agricultural tools and machinery are typically designed without consideration of women's ergonomic needs, resulting in increased physical strain and reduced efficiency. Despite these challenges, recent initiatives including women-focused Farmer Producer Organizations (FPOs) and targeted government interventions are gradually enhancing their participation in leadership roles and market systems.

### **Case studies and emerging leadership**

The agricultural landscape of Telangana is witnessing a gradual transformation, driven by women who are redefining their roles from laborers to innovators and entrepreneurs. Several individuals have demonstrated

remarkable success in adopting sustainable and diversified farming practices. For instance, some women farmers have transitioned to natural farming methods, reducing reliance on chemical inputs while improving productivity and profitability. Others have taken leadership roles in preserving traditional crop varieties, particularly millets, through community-based conservation initiatives. These efforts not only strengthen ecological sustainability but also revive indigenous knowledge systems. Collective action has also emerged as a powerful mechanism for empowerment. Women-led farmer organizations and cooperatives have enabled members to improve market access, enhance bargaining power, and engage in value-added enterprises. Such initiatives illustrate the potential of institutional support in transforming rural livelihoods.

### **Institutional contributions**

Organizations working at the grassroots level have played a crucial role in advancing women's empowerment in agriculture. For example, community-based institutions have facilitated the reclamation of degraded lands, promoted sustainable farming practices, and established decentralized food distribution systems. These efforts have contributed to both livelihood security and ecological restoration. Long-term engagement by such organizations has also strengthened women's collective agency, enabling them to participate more effectively in local governance and resource management. Women constitute an indispensable pillar of the agricultural sector, particularly in regions such as Telangana where their contributions span the entire spectrum of farming activities. From labor-intensive field operations to post-harvest management and allied sectors, their role is both extensive and multifaceted. Despite this, structural inequalities such as limited land ownership, restricted access to institutional credit, inadequate exposure to modern trend



and marginal participation in strategic decision-making continue to constrain their full potential. The challenges faced by women farmers are further intensified in the context of climate change. As primary managers of natural resources at the household and community levels, women are disproportionately affected by environmental degradation, water scarcity, and shifting weather patterns. At the same time, their experiential knowledge, adaptive practices, and resource management strategies position them as key agents in building climate-resilient agricultural systems. This dual reality underscores the urgent need to transition from viewing women as vulnerable beneficiaries to recognizing them as active contributors and leaders in sustainable development. Addressing these disparities requires a multidimensional approach. Policy interventions must move beyond symbolic inclusion and actively promote gender equity through secure land rights, improved access to financial services, tailored extension systems, and the development of women-friendly agricultural technologies. Strengthening institutional mechanisms such as Self-Help Groups (SHGs), Farmer Producer Organizations (FPOs), and cooperatives can further enhance women's collective bargaining

power and market integration. Additionally, investing in education, skill development, and digital inclusion will enable women to participate more effectively in emerging agricultural value chains. Equally important is the need to integrate women's perspectives into climate policy and natural resource governance. Their localized knowledge of biodiversity conservation, seed systems, and sustainable farming practices offers valuable insights for designing context-specific adaptation strategies. Recognizing and scaling such grassroots innovations can significantly contribute to ecological sustainability and food system resilience. Ultimately, empowering women in agriculture is not solely a matter of social justice; it is a strategic imperative for achieving broader development outcomes, including food security, poverty reduction, and environmental sustainability. A more inclusive agricultural framework—one that acknowledges, supports, and amplifies the contributions of women—has the potential to drive transformative change across rural economies. By placing women at the center of agricultural and climate discourse, policymakers and institutions can foster a more resilient, equitable, and sustainable future.

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